REMARKS

This Amendment is filed in response to the Office Action mailed June 29, 2006. All objections and rejections are respectfully traversed.

Claims 1-31 are in the case.

Claims 21-31 were added to better claim the invention.

Claims 2, 3, 18 and 20 were amended to better claim the invention.

Claim 11 was amended to correct a typographical error.

Information Disclosure Statement

Applicant thanks the Examiner for pointing out deficiencies in Applicant's IDS submissions on June 27, 2005 and July 14, 2005. A new IDS has been submitted with the cited corrections. Copies of the cited references have not been included as they have previously been provided. Additionally, because Applicant was unable to locate any copies of the cited publications with page numbers, Applicant has previously included all relevant pages of those cited references.

Specification

Applicant thanks Examiner for his opinion that "a" should be inserted between the words "to" and "disk" on line 7 of the abstract and in claims 16, 17 and 19. Applicant respectfully points out that one skilled in the art will understand that "being committed to disk" encompasses the possibility of being committed to a plurality of disks. As such, Applicant respectfully traverses the Examiner's objections.

At paragraph 4 of the Office Action, Examiner has requested under MPEP § 608.01(b) that the extraneous markings "H:\112\0..." be removed from Applicant's abstract. Applicant can find no authority in MPEP § 608.01(b) requiring such removal.

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Applicant notes that such markings are uniform on all pages of the specification as part of the footer. Applicant respectfully traverses the Examiner's objection.

Applicant has inserted the word "raw" between the word "the" and "data" as recommended on line 2 of claim 18 for clarity.

Rejections Under 35 U.S.C. § 112

At paragraph 7 of the Office Action, the Examiner rejected claims 1-20 under 35 U.S.C. § 112, paragraph 2 for insufficient antecedent basis. Applicant thanks the Examiner for pointing out the typographical errors in claims 1-20 which have been corrected by way of this Amendment.

Rejections Under 35 U.S.C. § 102

At paragraph 8 of the Office Action, claims 1-5, 11 and 15-20 were rejected under 35 U.S.C. §102(b) as being anticipated by Hitz et al., U.S. Patent No. 5,819,292 issued on October 6, 1998 (hereinafter "Hitz").

Applicant's claim 1, representative in part of the present invention states:

1.   A method for detecting leaked buffer writes between a first consistency point and a second consistency point, the method comprising:

receiving a write operation directed to a file;

creating a data buffer associated with the write operation; and

writing a *buffer check control structure* to a raw data buffer associated with the data buffer.

Applicant respectfully urges that Hitz does not show Applicant's novel *buffer check control structure.*

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Applicant's novel *buffer check control structure* is utilized to detect leaked buffer writes between a current consistency point and a next consistency point (CP). Once a volume or qtree is determined to have an active buffer check option, the *buffer check control structure* is overwritten into the first part of the raw data area of the data stored in memory. The novel *buffer check control structure* includes two 32-bit "magic" numbers that are utilized by a file system of the storage operating system to uniquely identify the *buffer check control structure*. Also embedded into the *buffer check control structure* is a 32-bit CP value associated with the data for the current CP. During write allocation of a CP, the CP value stored in *buffer check control structure* is compared with the current CP value. If the CP value stored in the *buffer check control structure* is not the value of the current CP, then the buffer data has leaked from one CP to another (Applicant's Summary; Page 7, lines 14-30 to Page 8, lines 11).

Examiner cites Hitz (col. 7, lines 5-41):

FIG. 10 is a diagram illustrating a file referenced by a WAFL inode 1010. The file comprises indirect WAFL buffers 1020-1024 and direct WAFL buffers 1030-1034. The WAFL in-core inode 1010 comprises standard inode information 1010A (including a count of dirty buffers), a WAFL buffer data structure 1010B, 16 buffer pointers 1010C and a standard on-disk inode 1010D. The incore WAFL inode 1010 has a size of approximately 300 bytes. The on-disk inode is 128 bytes in size. The WAFL buffer data structure 1010B comprises two pointers where the first one references the 16 buffer pointers 1010C and the second references the on-disk block numbers 1010D.

Each inode 1010 has a count of dirty buffers that it references. An inode 1010 can be put in the list of dirty inodes and/or the list of inodes that have dirty buffers. When all dirty buffers referenced by an inode are either scheduled to be written to disk or are written to disk, the count of dirty buffers of inode 1010 is set to zero. The inode 1010 is then requeued according to its flag (i.e., no dirty buffers). This inode 1010 is cleared before the next inode is processed. Further the flag of the inode indicating that it is in a consistency point is cleared. The inode 1010 itself is written to disk in a consistency point.

The WAFL buffer structure is illustrated by indirect WAFL buffer 1020. WAFL buffer 1020 comprises a WAFL buffer data structure 1020A, a 4 KB buffer 1020B comprising 1024 WAFL buffer pointers and a 4 KB buffer 1020C comprising 1024 on-disk block numbers. The WAFL buffer data structure is 56 bytes in size and comprises 2 pointers. One pointer of WAFL buffer data structure 1020A references 4 KB buffer 1020B and a second pointer references buffer 1020C. In FIG. 10, the 16 buffer pointers 1010C of WAFL inode 1010 point to the 16 single-indirect WAFL buffers 1020-1024. In turn, WAFL buffer 1020 references 1024 direct WAFL buffer structures 1030-1034. WAFL buffer 1030 is representative of direct WAFL buffers.

Although Hitz mentions WAFL buffers, WAFL buffer data structures and dirty buffers, Applicant respectfully urges that Hitz is completely silent to Applicant's claimed novel *buffer check control structure*. Applicant respectfully urges that the Hitz patent is legally precluded from anticipating the claimed invention under 35 U.S.C. § 102 because of the absence from the Hitz patent of Applicant's novel *buffer check control structure*.

Similarly, independent claims 11 and 20 and dependent claims 2-5, and 15-19 also include limitations of a *buffer check control structure*. As noted above, Hitz does not disclose the concept of *buffer check control structure*. As such, Hitz does not anticipate these claims.

Rejections Under 35 U.S.C. § 103

At paragraph 9 of the Office Action, claims 6-10, and 12-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hitz and in view of Ganesh et al., U.S. Patent No. 6,192,377 issued on February 20, 2001 (hereinafter "Ganesh").

Applicant respectfully points out that dependent claims 6-10 and 12-14 are dependent from independent claims which are believed to be allowable for the reasons de-

scribed above. Accordingly, claims 6-10 and 12-14 are believed to be in condition for allowance.

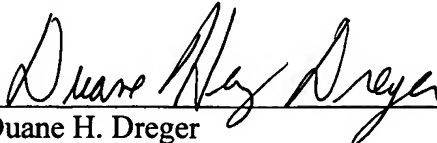All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims, and therefore in condition for allowance.

Favorable action is respectfully solicited.

Should the Examiner feel personal contact is required to discuss this matter further, please do not hesitate to call the undersigned attorney at (617) 951-2500.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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